Communications: The tale of two MOSs

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Advancements in communications technology have increased the flow of information throughout the battlefield, enabling commanders at all levels to make better, more informed decisions quicker than ever before. These technological advances have benefited the entire Marine Corps, from the highest level of command down to the company and platoon level. With the increase in technology, however, comes the need for individuals to install, operate, and maintain these systems. This responsibility inevitably falls to the communications community, where the volume and scope of equipment tax the average generalist. The Marine Corps needs to restructure the communications field into two military occupational specialties (MOS) to support advancements in technology, to improve entry level officer proficiency, and to manage expectations.

BACKGROUND

The current communications military occupational specialty (MOS) 0602 is a hybrid of two former MOSs: the 2502 communications officer and the 4002 data systems officer. This transformation began in early 1993 when the all marine message (ALMAR) 049/93 introduced the concept of the S-6. The concept was developed and briefed to the Assistant Commandant of the Marine Corps Committee in March 1995 and was positively endorsed. In 1996 that the Marine Corps actually combined the

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two MOSs into a single MOS, the communications and information systems officer (0602).[1] This merger provided commanders at all levels with a single point of contact for all communications support, from tactical radios to data networking. As a result of this new MOS, significant efforts were made by the Training and Education Command (TECOM), as well as by the Communications School to develop the curriculum and training to support this "jack of all trades" communications officer.

At the time, the merger of the two communications MOSs made sense. Wholesale changes in the communications field required officers to be more well-rounded. Having a single point of contact can often simplify things; however, this was not the case for the intelligence community. The intelligence officer (0202) was very similar to the 0602 communications officer in that the intelligence officer was the sole point of contact for the commander for all intelligence functions. This proved to be inadequate during Desert Storm as entry level intelligence officers were ill-equipped to deal with the demands made of them. Major General Van Riper noticed this and developed a plan to correct the deficiencies of the intelligence community. His plan called for a shift from generalized basic intelligence to

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[1]Celotto, Daniel, "Data and Com Officers: Re-evaluating the Current 0602 MOS." EWS, 2006

specialized/progressive intelligence.[2] Essentially, Major General
Van Riper was looking for specialized training in four entry-
level disciplines (ground, air, human, and signals
intelligence). The entry level intelligence officer would focus
solely on his or her particular discipline until he or she
reached the rank of captain. At the rank of captain, all
intelligence officers (regardless of specialty) would attend a
senior intelligence course, and upon successful completion of
the course would be re-designated as a MAGTF intelligence
officer, at which point he or she would no longer be focused on
a particular aspect of intelligence, but rather maintain an
understanding of all aspects of intelligence.[3] A similar
progression could be used for the communications officer.

TECHNOLOGICAL ADVANCES

Communications and information technology has always been
an evolving arena. In the commercial world, as newer technology
becomes available, communication networks become more complex.
Marine Corps communications networks are no different.
Communications officers are constantly faced with the challenge

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[2] Rababy, David. "Marine Corps Intelligence: Officer Training
in the Future." *Loyola.*<http://
www.loyola.edu/dept/politics/intel/rababy.html> (30 November
2008).

[3] Liebl,Vernie. "The intelligence plan: An update." *Marine
Corps Gazette 85,* no. 1(2001): *ProQuest* (24 November 2008)

of planning, installing, operating, and maintaining robust communications networks that constantly evolve and expand. Technological advancements have made this challenge more difficult as new equipment/new systems are added to the mix.

Consequently, a communications officer has to deal with different command and control (C2) systems that exist within the Marine Corps. C2 systems like the Command and Control Personal Computer (C2PC), the Advanced Field Artillery Tactical Direction System (AFATDS), and the Data Automated Communications Terminal (DACT) have all contributed to increased information flow throughout the battlefield. Although a communications officer is not always responsible for the installation, operation, and maintenance of all these systems at any one time, they must plan for the possible employment of any of them. Anything that touches a communications network requires detailed planning to ensure that the system works properly and that it does not degrade other systems on the same network. For example, bandwidth management becomes a huge concern for the communications officer. C2 systems exist at all levels of the Marine air-ground task force (MAGTF); therefore, communications officers at every level will have to deal with myriad systems.

C2 systems have undoubtedly benefited commanders and their staffs, but the systems alone would be worthless without the transmission paths they utilize. The Marine Corps has limited bandwidth, especially at the lower levels, which requires detailed planning in order to employ of these transmission systems. For example, the infantry battalion, as its primary transmission system, uses the AN/MRC-142, a line of sight (LOS) system that provides a 576 kilobyte per second (kbps) transmission path. The path is used by the communications officer to allocate services. The amount of bandwidth provided by this path used to be sufficient, but due to the increase in C2 systems and other requirements for voice and data, this bandwidth just simply is not enough. Newer, more robust transmission systems, like the Support Wide Area Network (SWAN), Wireless Point-to-Point Link (WPPL), and the Tropo/Satellite Support Radio (TSSR) now exist. Although these newer systems have helped the 0602 deal with the bandwidth situation, they have also created a training issue. As technology advancements are incorporated into USMC systems, personnel must be trained to deal with the new systems, creating a temporary shortage until the gap is closed.

Another issue concerning communicators is the move towards net-centric warfare. This concept was derived in order to

control the flow and dissemination of information on the battlefield. Historically, information was passed on the battlefield through voice based systems (single-channel radio and/or telephone networks). With the advancements in technology, the ability to utilize IP based data networks to transfer information has become the standard. These technologies still require trained personnel to install, operate, and maintain them, necessitating an adjustment in Marine Corps communications doctrine.[4]

ENTRY LEVEL PROFICIENCY

In the current communications model, entry level-officers attend the Basic Communications Officer Course, which is a six-month course designed to produce basically trained communications officers. During the course, students are introduced to all facets of Marine Corps communications to include single channel radio, voice switching, and data communications. All students are expected to understand how to plan, install, operate, and maintain both voice and data networks. The problem is that the course duration is only six months, which by no means is enough time for any officer to understand fully the complexities that exist with

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[4] James M. Breitinger and J.D. Wilson. "Migrating to join tactical radios." *Marine Corps Gazette 87,* no.3 (2003): *ProQuest* (24 November 2008)

communications. Communications is arguably one of the most technical MOSs in the Marine Corps; to expect an entry-level officer to understand all aspects of his or her job fully after only a six-month introduction is absurd.

Ironically, the communications training pipeline for the enlisted personnel is completely different than the officer pipeline. Enlisted communicators attend Marine Corps Communications-Electronics School (MCCES) in Twentynine Palms, California. MCCES breaks down its curriculum to focus students on a particular functional area. MCCES consists of a headquarters company and three training companies/schools. Each school focuses on a particular functional area of communications, such as radio, wire, and data.[5] This allows the students to become technical duty experts in their specific fields: radio operators focus on tactical radio systems, and data Marines focus on data networking. This specialization eliminates the "jack of all trades" scenario and produces specially trained technical experts.

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[5] *MCCES Home Page.* < https://www.29palms.usmc.mil/tenants/mcces/mcceshome.asp> (1 December 2008)

EXPECTATION MANAGEMENT

The communications field has undergone significant changes since the global war on terror began. Most of the changes that have taken place are in the equipment that is being employed. To illustrate this, the author compared two tables of equipment (T/E): one from an infantry battalion in 2004, and the other from another infantry battalion in 2008. The comparison focused on some legacy systems, as well as some of the newer systems to illustrate not only the increase in quantity of legacy systems, but also the quantity of new gear. Results of the comparison showed the realization that more and more equipment is being employed, but without the knowledge base to understand and, more important utilize, the equipment's capabilities. For instance, in 2004 an infantry battalion maintained five PRC-150 radio systems. In 2008, that number increased to 27, an increase of 22 radio systems. Another example is the remote subscriber access module (RSAM), the new, digital switchboard, which replaces the legacy switchboard SB-3865. This system was not around in 2004, but currently an infantry battalion would possess two RSAMs and no SB-3865s. The problem with the RSAM, as with all new equipment, is the training that is required to operate it. The RSAM is a highly technical piece of equipment requiring significant training to operate. Training is not always readily available to Marines outside of the schoolhouse, which means a

limited number of, if any, trained marines are available at each unit.[6]

COUNTER-ARGUMENT

With all the technological advances in recent years, this author contends that splitting the communications MOS back into two separate MOSs is the way to go. The amount of information that an entry level officer is expected to learn is overwhelming. Nevertheless, others feel that everything is just the way it needs to be.

The movement towards a more network-centric battlefield has caused a lot of the lines within communications to become blurred. Some would argue that equipment is no longer solely radio, wire, or data, but a combination of all three. Infact, many of the radio systems that are being employed today are IP based systems that have the ability to be networked with computer-based systems necessitating a multi-skilled (voice and data) technician. A prime example of this is Harris Corporation's PRC-150 radio system. It is a high frequency (HF) and low band very high frequency (VHF) radio system that has the

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[6] "Fiscal Year 2009: Unit TO&E Report H&S CO 1/5 1st MARDIV and Fiscal Year 2004: Unit TO&E Report H&S CO 3/6 2nd MARDIV." *United States Marine Corps Total Force Structure Management System*. (2 December 2008).

ability to conduct tactical chat, which is nothing more than instant messaging, through HF radio transmissions. This system can also be connected directly into an existing local area network (LAN), allowing personnel in established positions to communicate digitally with forces on the ground. This not only improves the quality of the communications, but also the reliability.

In order to utilize this capability successfully, an individual must be familiar with not only the radio aspect, but the networking portion as well. Since the enlisted Marines are trained in their specific functional area, the only person capable of planning this type of network is the 0602 communications officer. He or she has the basic understanding of both aspects and can develop a plan to employ this system and all its capabilities.

CONCLUSION

The evolution of the communications field has resulted in an oversaturation of technical assets at the battalion level. The current model does not adequately support the level of training that is required to plan, install, operate, and maintain these systems. Breaking the communications MOS into two separate MOSs would enable communicators to provide better, more

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informed support to commanders. Major General Van Riper's model for the intelligence community is sound, and one that could easily be adopted for the communications field. Separating entry-level communicators into either basic communications (transmissions) or networking communications (voice and data) would create a more proficient communicator. At the rank of captain, communicators would attend a planners course that would combine the two MOSs creating a Marine Air-Ground Task Force (MAGTF) communications officer. This model not only supports the current communications environment, but also future changes in technology.

1943 words

Bibliography

Bragg, Captain M.A. "Complexity and Communications: The drift towards generalization and away from specialization in the dynamic and technical communications field." *EWS Contemporary Issues Paper* (Quantico, VA) (2005).

Breitinger, James M. and Wilson, J.D. "Migrating to joint tactical radios." *Marine Corps Gazette* 87, no. 3 (March 2003): *Proquest* (24 November 2008).

Broome, Captain J.D. "Communications Officer: Still Lacking." *EWS Contemporary Issues Paper* (Quantico, VA) (2004).

Celotto, Captain Daniel. "Data and Comm Officers: Re-evaluating the current 0602 MOS." *EWS Contemporary Issues Paper* (Quantico, VA) (2006).

Liebl, Vernie R. "The intelligence plan: An update." *Marine Corps Gazette* 85, no. 1 (January 2001): *Proquest* (24 November 2008).

MCCES Home Page. https://www.29palms.usmc.mil/tenants/mcces/mcceshome.asp (1 December 2008).

Rababy, David. "Marine Corps Intelligence: Officer Training in the Future." *Loyola*.<http://www.loyola.edu/dept/politics/intel/rababy.html> (30 November 2008).

"Fiscal Year 2009: Unit TO&E Report H&S CO 1/5 1st MARDIV." *United States Marine Corps Total Force Structure Management System*. (2 December 2008).

"Fiscal Year 2004: Unit TO&E Report H&S CO 3/6 2nd MARDIV." *United States Marine Corps Total Force Structure Management System*. (2 December 2008).